

Claims

1. A system for handling light that is amenable for intensification by an Image Intensifier, and wherein the system includes -

light regulating means for regulating light intensity; wherein said light regulating means are either positioned externally to said image intensifier at the focal plane of the light to be intensified, or placed internally at the focal plane of said image intensifier before the photo sensitive area of said image intensifier; and

a control and feedback circuit that includes an image sensor, wherein said image sensor is capable of detecting the zones with intensely bright light areas and is coupled to an image processing means that relates the locations of said zones with intensely bright light areas that where detected by said image sensor to the respective areas on said light regulating means, in a manner enabling selective operation of said light regulating means at those areas, so that it can influence the image received from said image intensifier; and

wherein said system is characterized by -

said light regulating means being a transmissive MEMS component.

2. The system for handling light that is amenable for intensification by an Image Intensifier according to claim 1, wherein -

said system is characterized by implementing a reflective MEMS component as said light regulating means instead of using said transmissive MEMS, and wherein -

said control and feedback circuit drives in addition said image intensifier to operate in a gating mode, in order to time the light intensifying action of said image intensifier to start upon the specific time slot that was essentially completed, of deflecting the light rays emanating from the intensely bright light areas away from the input plane of said image intensifier.

3. The system for handling light that is amenable for intensification by an Image Intensifier according to claim 1, wherein -

said transmissive MEMS component is mounted as an integral part inside said image intensifier.

- 5 4. The system for handling light that is amenable for intensification by an Image Intensifier according to claim 1, wherein -

said image sensor that detects the zones with intensely bright light areas is a CCD / CMOS camera.

- 10 5. The system for handling light that is amenable for intensification by an Image Intensifier according to claim 4, wherein -

said camera is located so that it can record/shoot items in parallel to the line of sight of said image intensifier and receives, independently, reflected light signals from the area under surveillance.

- 15 6. The system for handling light that is amenable for intensification by an Image Intensifier according to claim 4, wherein -

said camera is located at the output of said image intensifier in order to record / photograph the intensified image.

7. The system for handling light that is amenable for intensification by an Image Intensifier according to claim 1, wherein -

20 said image sensor is a device of the ICCD type and is integrated in the image intensifier.

8. The system for handling light that is amenable for intensification by an Image Intensifier according to claim 1, wherein -

25 said image intensifier is endowed with a gating capability, hence it is capable of timing the light being reflected from a target that was illuminated using an auxiliary source, for receiving timed light reflections from said illuminated target.

9. A passive night viewing system, that includes -

an image intensifier equipped with a photo sensitive area upon which the image that can be intensified is projected, and wherein the intensified image is being observed at its output; and wherein

5 said passive night viewing system is characterized by the additional items that it incorporates, namely -

a system for controlling light signals that can be intensified by said image intensifier, and that includes -

10 light regulating means positioned at the focal plane of said light amenable for intensification at a location which is, however, before the photo sensitive area of said image intensifier; and

15 a control and feedback circuit that includes an image sensor, and wherein said image sensor detects the intensely bright light areas and an image processing means that relates the intensely bright light areas that were detected using said image sensor, to the respective areas of the light regulating means, in a manner that enables selective operation of the light regulating means in said intensely bright light areas in order to influence the image being received at the output plane of said image intensifier, and wherein -

20 said system for controlling the light that can be intensified is characterized by that -

said light regulating means constitutes a transmissive MEMS component.

10. A passive night viewing system in accordance with claim 9, wherein -

25 said light regulating means constitutes a reflective MEMS component (instead of transmissive MEMS) and wherein said control and feedback circuit drives, in addition, the image intensifier to operate in a gating mode, so that it times the intensification of the light by said image intensifier to suit the specific time slot that was essentially completed, of deflecting the light rays emanating from the intensely bright

light areas away from the photo sensitive surface area of said image intensifier.

11. A method for handling light that is amenable for intensification by an Image Intensifier that includes the stages of -

5 positioning light regulating means at the focal plane of the light that is amenable for intensification and before the photo sensitive area of the image intensifier; and

 detecting the zones of intensely bright light areas in the image being received from the image intensifier, and

10 relating the locations of said intensely bright light areas to the respective zones of said light regulating means surface, and

 conducting a selective operation of said light regulating means in the above cited zones and areas, in order to influence the intensified image that is received at said image intensifier's output.

15 Whereas said method is characterized by -

 said light regulating means being a transmissive MEMS component.

12. A method for controlling light that is amenable for intensification by an Image Intensifier in accordance with claim 11, wherein -

20 said method is characterized by said light regulating means a reflective MEMS component (instead of a transmissive MEMS one) and the method includes, in addition, a stage of -

25 operating said image intensifier in a gating mode, so that it times the intensification of the light by said image intensifier to suit the specific time slot that was essentially completed, of deflecting the light rays emanating from the intensely bright light areas away from the photo sensitive surface area of said image intensifier.